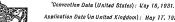
PATENT SPECIFICATION



382.572

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COMPLETE SPECIFICATION.

Improvements in or relating to Surgical Material.

We, IODINE EDUCATIONAL BUREAU, INC., a Body Corporate, organised according to the laws of the State of New York, 5 United States of America, of 120, Broadway, New York City, State of New York, United States of America, (Assignees of George Melvin Karns, a Citizen of the GEORGE MELVIN KARNS, a Citizen of the United States of America, of Mellon to Institute of Industrial Research, University of Pittsburgh, Pittsburgh, State of Pennsylvania, United States of America), do hereby declare the nature of this invention and in what manner the same it to be marked to be marked. of this inventor and in what minner the same is to be performed, to be partial to mularly described and ascertained in and by the following statement:—

This invention relates to material for making surgical dressings, and consists in waterial for making surgical dressings, and consists making surgices dressings, and compared in a 20 in material for such use prepared in a manner and having characteristics which render it peculiarly serviceable.

In making surgical dressings and in rendering first aid to injured persons. surpical gauze is commonly used; and it 25 is desirable that for such use the gauze be bacteriologically sterile, and addi-tionally that it be a carrier of antiseptic agent: it has become common practice to im-30 pregnate surgical gauze with active antiseptic agents, so that when the gauze is applied to a wound, it will serve not only as a protective covering, but also, by virtue of the substance with which it 35 has been impregnated, it will serve to destroy bacteria present upon the wound surface. Free elemental iodine, an excellent antiseptic agent, may not readily be applied to surgical gauze for the purpose 40 indicated-at least, not with satisfactory results—for a number of reasons.

It gives to the gauze an unsightly appearance; if gauze to which free iodine has been applied be allowed 45 to stand for a time unused, some of the iodine will react with the material of the gauze, and in so doing will lose to a degree its antiseptic power and will weaken the gauze; and, since it will volation and of the indicate of the control of the control

This invention consists in surgical

Price 1/-]

gauze or like material, not subject to deterioration, which, upon application to a moist wound or upon being moistened with water after application, will release free iodine, to serve its antiseptic purpose.

To accomplish this result, a web of surgical gauze or of other suitable porous sheeted material, is impregnated in a part of its extent with iodine-containing material and in another part with material capable of releasing iodine from such iodine-containing material, when the two materials are brought to contact in the presence of water. The iodine-con-taining material may be an iodide or an iodate or a periodate. The iodine-releasing material will, in the case of iodide, be an oxidizing agent; and it is also necessary to the accomplishment of the reaction that an acid be present to complete the reaction. The iodide employed may be any of the iodides of sodium, potassium, calcium, barium, or other metal, or a mixture of two or more of these. As oxidizing agents, metallic iodates or periodates, such as calcium or potassium iodate or periodate, may be Other oxidizing agents, such as potassium permanganate or ferric chloride may be used, the choice being governed by the effect which they or their reaction products may have in practice, other than the primary effect of releasing iodine. As for the acid, solid, soluble, non-hygroscopic acids which do not react readily with free iodine may be used. Suitable acids are citric and tartaric acids. Instead of an acid directly introduced, salts of strong acids and weak bases, such as aluminum sulfate, which with water hydrolyzes to give an excess of hydrogen ions, may be used. The oxidizing agent and the acid may be afforded together, in a single compound, such as iodic or periodic acid or ferric chloride. Any of these in the presence of 100 water will react with an iodide to release iodine. If, however, an oxidizing agent and an acid be provided as distinct materials, they may be brought together in one and the same solution for 105 impregnation of the gauze.

will be a reducing agent. The iodine-5 containing material may, for example, be the iodate or the periodate of barium,

calcium, or potassium, or other metal, or a mixture of two or more of these. In this case also it is necessary addi-10 tionally to provide an acid such as those already named. Among the reducing already named. Among the reducing agents available and useful to the ends

indicated are iodide salts, such as sodium, potassium, or calcium iodide, and also

15 thiosulfates, such as sodium, or potassium, thiosulfate, and indeed reducing agents generally.

To prepare the gauze for use a web of gauze of suitable width, which is intended 20 to be folded so that several folds will overlie the wound to which it is to be applied, is impregnated over separate areas with solutions of the several materials indicated. After making the 25 applications the gauze is dried before fold-

ing. The impregnated and dried gauze is so folded that after folding there are present in superposed layers those materials which in the presence of 30 moisture will react to release free iodine

The impregnated layers may be brought by folding into immediate contact, or they may be separated by an unimpregnated layer of gauze or by a layer of 35 other water-penetrable material.

Having now particularly described and

In case an iodate or a periodate be ascertained the nature of our said inven-employed as the iodine-containing tion and in what manner the same is a material, the iodine-releasing material be performed, we declare that what we

claim is:-1. A surgical material consisting of

superposed webs of water-penetrable material, one web being impregnated with an iodine-containing material capable of releasing free iodine, and another web being impregnated with a material capable of reacting in the presence of moisture with such iodine-containing material with the release of iodine.

material with the relegas of notifie.

2. A surgical material consisting of superposed webs of water-penetrable material, one web being impregnated with a metallic isolate or periodate and another web being impregnated with reducing agent with a most another web being impregnate existing with an end of the penetral p is capable of reacting with the iodate or

periodate with the release of iodine. 3. A surgical material consisting of superposed webs of water-penetrable material, one web being impregnated with a salt of iodine and another web being impregnated with an oxidizing substance which in the presence of moisture and in association with an acid reacts with such salt of iodine and releases iodine.

Dated this 17th day of May, 1932. ABEL & IMRAY, Agents for the Applicants, 30, Southampton Buildings, London,

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